

REMARKS

By this Amendment, Applicants cancel claim 25 and add new claims 26-30 in order to claim further aspects of Applicants' invention. Claims 1-24 and 26-30 are currently pending in this application.

In the Final Office Action mailed June 15, 2005¹, the Examiner (1) provisionally rejected claims 1-25 under the doctrine of obviousness-type double patenting; (2) rejected claim 25 under 35 U.S.C. § 101 as being directed to non-statutory subject matter; (3) rejected claims 1-3, 7, 11-13, 17, 21-23, and 25 under 35 U.S.C. § 102(b) as being anticipated by Berry et al. (U.S. Patent No. 5,732,271); and (4) rejected claims 4-6, 8-10, 14-16, 18-20, and 24 under 35 U.S.C. § 103(a) as being unpatentable over Berry et al. in view of Hostetter et al., "Curl: A Gentle Slope Language for the Web".

In view of the foregoing amendments and the following remarks, Applicants respectfully traverse each of these rejections. Each section of the Final Office Action is addressed under a parallel heading below.

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicant declines to automatically subscribe to any statement or characterization in the Office Action.

Double Patenting

Claims 1-25 are provisionally rejected claims under the doctrine of obviousness-type double patenting. Applicants request that the Examiner continue to hold the double patenting rejection in abeyance until claims 1-24 are otherwise allowable (Final Office Action, p. 29, ll. 4-5).

Claim Rejections - 35 U.S.C. § 101

Claim 25 is rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Applicants respectfully disagree with the Examiner's characterization of this claim. However, solely in order to advance prosecution of the present application, Applicants hereby cancel claim 25, without prejudice or disclaimer. Accordingly, the Examiner's rejection of claim 25 is now moot.

Claim Rejections - 35 U.S.C. § 102

Claims 1-3, 7, 11-13, 17, 21-23, and 25 are rejected under 35 U.S.C. § 102(b) as being anticipated by Berry et al. Applicants respectfully submit that Berry et al. fails to support the Examiner's rejection, for at least the following reasons.

In order to properly anticipate Applicant's claimed invention under 35 U.S.C. § 102, each and every element of the claim in issue must be found, either expressly described or under principles of inherency, in a single prior art reference. Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in...the claim." See M.P.E.P. § 2131 (8th Ed., Rev. 2, May 2004), quoting *Richardson v. Suzuki*

Motor Co., 868 F.2d 1126, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989). Finally,

"[t]he elements must be arranged as required by the claim." *Id.*

Claim 1 recites a method of processing data comprising:

defining an object with defined fields to support values in
preallocated memory space and with an option data
structure which supports references to option values *without
preallocation of memory space for the full option values*, and

accessing a field value stored in one of the defined fields
and accessing an option value not stored in the defined
fields in the object using expressions of the same syntactic
form.

Claim 1, ll. 2-7 (emphasis added). Claims 21 and 22 are directed to a data processing system and a computer program product, respectively, and contain recitations similar to those cited in claim 1.

The Examiner asserts that Berry et al. discloses that "only attribute values contained in the derived object need memory space preallocated; for those reference[s] [the derived object] holds do not require memory preallocation" as memory is "already allocated by the prototypical objects." Final Office Action, p. 17, ll. 6-8. However, as pointed out in the Amendment filed June 22, 2004, Berry et al. does not suggest modifying *traditional object-oriented techniques* in any way.

The Examiner, in response to Applicants' arguments in the Amendment filed June 22, 2004, stated that "the claims **do not recite** an option data structure that supports references to option values without preallocation of memory for full option values by 'modifying them in any way' and 'any technique for avoiding the memory preallocation'" (Final Office Action, p. 27, ll. 16-18 (emphasis original)). The Examiner further stated that "[a]s the claims do not recite what the option data structure is, the

examiner considers it as any data structure that supports dynamic memory allocation such as pointers (an address, a link, or a reference), linked lists, trees etc" (Final Office Action, p. 28, ll. 1-4).

Regarding the Examiner's response that the claims do not recite "modifying them in any way," Applicants hereby clarify an argument that Applicants made in the Amendment filed June 22, 2004. Applicants argued that "[i]t appears that Berry is consistent with traditional object-oriented techniques, as Berry does not suggest modifying them in any way" (Amendment filed June 22, 2004, p. 13, ll. 13-14). In other words, it appears that Berry et al. is consistent with traditional object-oriented techniques, as Berry et al. does not suggest modifying *traditional object-oriented techniques* in any way. Next, regarding the Examiner's response that the claims do not recite "any technique for avoiding the memory preallocation," Applicants respectfully reiterate that the claims, in their current form, are allowable over Berry et al., as Berry et al. fails to teach or suggest each and every limitation recited in the claims.

Applicants direct the Examiner's attention to the specification, which discloses implementation details of exemplary option data structures and how they avoid preallocation of memory. For example, the Summary of the Invention provides additional disclosure about exemplary option data structures, i.e., "the option data structure may comprise a linked list of option items having option values" (Specification p. 2, ll.7-9). The Detailed Description of the Invention also contains extensive discussion of exemplary option data structures, for example, in Figures 1-7 and in sections "Implementation of Options" and "Invoking Change Handlers" (Specification pp. 11-19 and pp. 11-22). These detailed descriptions provide support for the claimed term

"option data structure" and illustrate exemplary techniques that can be used for avoiding memory preallocation. In response to the Examiner's rejections, while Berry et al. may teach the definition of objects having attributes, and while some of the data structures discussed in Berry et al. may be dynamically allocated, there is nothing in Berry to suggest using dynamically allocated data structures to avoid preallocating storage for options that are not set on a particular object instance.

Similar to traditional object-oriented languages, the graphical hierarchy described in Berry et al. preallocates memory space in an object for each value that can be set on the object. As pointed out by the Examiner (Final Office Action, p. 16, ll. 17-18, p. 17, ll. 2-3, and p. 28, ll. 6-8), Berry et al. teaches that "[a] derived object can *contain attribute values* or it can *hold references to prototypical objects*" (Berry et al., col. 2, ll. 39-41 (emphasis added)). Consequently, the derived objects described by Berry et al. contain at least "references to prototypical objects" and, therefore, require preallocation of memory to at least store the references. Moreover, "each prototypical object has *one or more* attributes." Berry et al., col. 3, ll. 50-51. Consequently, the prototypical objects require memory preallocation for *at least* one attribute, even if the attribute is not set. Id.

Even assuming that Berry et al. teaches a derived object that does not need to preallocate *additional* memory space for the attribute values, Berry et al. does not teach or suggest at least "defining an object with defined fields to support values in preallocated memory space and with an option data structure which supports references to option values without preallocation of memory space for the full option values." Therefore, Berry et al. fails to teach or suggest each and every element of

claims 1, 21 and 22, and Applicants respectfully request that the rejection of these claims under 35 U.S.C. § 102(b) be withdrawn and the claims allowed.

Claims 2, 3, 7, 12, 13, 17, and 23 depend from one of claims 1, 11, 21 and 22. As explained above, the Examiner's rejections of claims 1, 11, 21 and 22 lack support in Berry et al. Accordingly, the Examiner's rejections of claims 2, 3, 7, 12, 13, 17 and 23 likewise lack support in Berry et al. for at least the same reasons given above with respect to claims 1, 11, 21 and 22, and Applicants respectfully request that the rejection of these claims under 35 U.S.C. § 102(b) be withdrawn and the claims allowed.

Claim Rejections - 35 U.S.C. § 103

Claims 4-6, 8-10, 14-16, 18-20, and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Berry et al. in view of Hostetter et al. For at least the following reasons, Applicants respectfully submit that the Examiner's rejection lacks support in Berry et al. and Hostetter et al., whether taken alone or in combination.

In order to establish a prima facie case of obviousness, three criteria must be met. First, the prior art reference as modified must teach or suggest all the claim elements. Second, there must be some suggestion or motivation, either in the reference or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine the reference teachings. Third a reasonable expectation of success must exist. Moreover, each of these requirement must "be found in the prior art, and not be based on applicant's disclosure." See M.P.E.P. §§ 2143 and 2143.03 (8th Ed., Rev. 2, May 2004).

Claims 4-6, 8-10, 14-16, 18-20, and 24 depend from one of claims 1, 11 and 22. As explained above, Berry et al. fails to support the Examiner's rejections of claims 1, 11, and 22. Moreover, Hostetter et al. is not relied upon to teach, and, in fact, does not teach the above noted deficiencies of Berry et al. Accordingly, the Examiner's rejections of claims 4-6, 8-10, 14-16, 18-20, and 24 likewise lack support in Berry et al., and Applicants respectfully request that the rejection of these claims under 35 U.S.C. § 103(a) be withdrawn and the claims allowed.

New Claims 26-30

New independent claim 26 recites "[a] method of processing data comprising," *inter alia*, "defining one or more objects from a class definition, each of the objects having defined fields to support values in preallocated memory space and having an option data structure which supports references to option values *without preallocation of memory space for the full option values*" and "identifying change handler code that is executed when an option value stored in the option data structure changes, wherein *the change handler code is associated with the class definition during compilation.*" Claim 26, ll. 2-5 and ll. 9-11 (emphasis added). Support for the amendment may be found in at least page 9, lines 5-15 and page 16, lines 10-25 of Applicants' original specification, and FIGS. 1, 2A-E, and 3.

Applicants can find no teaching in Berry et al. or Hostetter et al. related to "defining" and "identifying" as recited in claim 26. Accordingly, new independent claim 26 is allowable over Berry et al. and Hostetter et al., whether taken alone or in combination.

New dependent claims 27-30 depend from claim 26 and allowable not only for the reasons stated above with regard to their allowable base claim 26, but also for their own additional features that distinguish them from Berry et al. and Hostetter et al.

Conclusion

In view of the foregoing remarks, Applicant submits that this claimed invention, is neither anticipated nor rendered obvious in view of the cited art. Applicant therefore requests the Examiner's reconsideration and reexamination of the application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

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By: 

Joshua C. Liu
Reg. No. 55,391